

Safety data sheet

Safe Work Australia - Code of Practice



Copper(II) sulphate $\geq 99\%$, Ph.Eur., anhydrous

article number: **CP86**
Version: **GHS 3.0 en**
Replaces version of: 2017-01-27
Version: (GHS 2)

date of compilation: 2016-04-15
Revision: 2020-06-09

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Identification of the substance	Copper(II) sulphate
Article number	CP86
Registration number (REACH)	01-2119520566-40-xxxx
Index No	029-004-00-0
EC number	231-847-6
CAS number	7758-98-7

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: laboratory chemical
laboratory and analytical use

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone: +49 (0) 721 - 56 06 0

Telefax: +49 (0) 721 - 56 06 149

e-mail: sicherheit@carlroth.de

Website: www.carlroth.de

Competent person responsible for the safety data sheet: Department Health, Safety and Environment

e-mail (competent person): sicherheit@carlroth.de

1.4 Emergency telephone number

Name	Street	Postal code/city	Telephone	Website
NSW Poisons Information Centre Childrens Hospital	Hawkesbury Road	2145 Westmead, NSW	131126	

Emergency information service

Poison Centre Munich: +49/(0)89 19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

Safety data sheet

Safe Work Australia - Code of Practice



Copper(II) sulphate $\geq 99\%$, Ph.Eur., anhydrous

article number: CP86

Classification acc. to GHS			
Section	Hazard class	Hazard class and category	Hazard statement
3.10	acute toxicity (oral)	(Acute Tox. 4)	H302
3.2	skin corrosion/irritation	(Skin Irrit. 2)	H315
3.3	serious eye damage/eye irritation	(Eye Irrit. 2)	H319

2.2 Label elements

Labelling GHS

Signal word

Warning

Pictograms

GHS07



Hazard statements

H302 Harmful if swallowed
H315 Causes skin irritation
H319 Causes serious eye irritation

Precautionary statements

Precautionary statements - prevention

P280 Wear protective gloves.

Precautionary statements - response

P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321 Specific treatment (see on this label).
P337+P313 If eye irritation persists: Get medical advice/attention.

Precautionary statements - disposal

P501 Dispose of contents/container to industrial combustion plant.

Labelling of packages where the contents do not exceed 125 ml

Signal word: **Warning**

Symbol(s)



Safety data sheet

Safe Work Australia - Code of Practice



Copper(II) sulphate $\geq 99\%$, Ph.Eur., anhydrous

article number: CP86

2.3 Other hazards

There is no additional information.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance	Copper(II) sulphate
Index No	029-004-00-0
Registration number (REACH)	01-2119520566-40-xxxx
EC number	231-847-6
CAS number	7758-98-7
Molecular formula	CuSO_4
Molar mass	159.6 g/mol

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower. In case of skin irritation, consult a physician.

Following eye contact

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

Following ingestion

Rinse mouth with water (only if the person is conscious). Call a doctor.

4.2 Most important symptoms and effects, both acute and delayed

Abdominal pain, Circulatory collapse, Diarrhoea, Vomiting, Conjunctivitis (pink eye), Irritation

4.3 Indication of any immediate medical attention and special treatment needed

none

Copper(II) sulphate $\geq 99\%$, Ph.Eur., anhydrous

article number: **CP86**

SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings
water spray, foam, dry extinguishing powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Non-combustible.

Hazardous combustion products

In case of fire may be liberated: sulphur oxides (SO_x)

5.3 Advice for firefighters

Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures



For non-emergency personnel

Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe dust.

6.2 Environmental precautions

Keep away from drains, surface and ground water.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Advice on how to clean up a spill

Take up mechanically. Control of dust.

Other information relating to spills and releases

Place in appropriate containers for disposal.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

Copper(II) sulphate ≥99 %, Ph.Eur., anhydrous

article number: **CP86**

SECTION 7: Handling and storage

7.1 Precautions for safe handling

No special measures are necessary.

- **Measures to prevent fire as well as aerosol and dust generation**

Removal of dust deposits.

- **Measures to protect the environment**

Avoid release to the environment.

Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice

- **Ventilation requirements**

Use local and general ventilation.

- **Specific designs for storage rooms or vessels**

Recommended storage temperature: 15 – 25 °C.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

Data are not available.

Relevant DNELs/DMELs/PNECs and other threshold levels

- **human health values**

Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	1 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
DNEL	1 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
DNEL	137 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

Copper(II) sulphate ≥99 %, Ph.Eur., anhydrous

article number: **CP86**

• environmental values

Endpoint	Threshold level	Environmental compartment	Exposure time
PNEC	7.8 µg/l	freshwater	short-term (single instance)
PNEC	5.2 µg/l	marine water	short-term (single instance)
PNEC	230 µg/l	sewage treatment plant (STP)	short-term (single instance)
PNEC	87 mg/kg	freshwater sediment	short-term (single instance)
PNEC	676 mg/kg	marine sediment	short-term (single instance)
PNEC	65 mg/kg	soil	short-term (single instance)

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggle with side protection.

Skin protection



• hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

• type of material

NBR (Nitrile rubber)

• material thickness

>0,11 mm

• breakthrough times of the glove material

>480 minutes (permeation: level 6)

• other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection



Copper(II) sulphate $\geq 99\%$, Ph.Eur., anhydrous

article number: **CP86**

Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P2 (filters at least 94 % of airborne particles, colour code: White).

Environmental exposure controls

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	solid (powder)
Colour	light grey
Odour	odourless
Odour threshold	No data available

Other physical and chemical parameters

pH (value)	3.5 – 4.5 (water: 50 g/l, 20 °C)
Melting point/freezing point	not determined
Initial boiling point and boiling range	This information is not available.
Flash point	not applicable
Evaporation rate	no data available
Flammability (solid, gas)	These information are not available
<u>Explosive limits</u>	
• lower explosion limit (LEL)	this information is not available
• upper explosion limit (UEL)	this information is not available
Explosion limits of dust clouds	these information are not available
Vapour pressure	This information is not available.
Density	3.6 g/cm ³
Vapour density	This information is not available.
Bulk density	~ 800 kg/m ³
Relative density	Information on this property is not available.
<u>Solubility(ies)</u>	
Water solubility	203 g/l at 20 °C
<u>Partition coefficient</u>	
n-octanol/water (log KOW)	This information is not available.
Auto-ignition temperature	Information on this property is not available.
Decomposition temperature	560 °C (ECHA)
Viscosity	not relevant (solid matter)
Explosive properties	Shall not be classified as explosive
Oxidising properties	none

Copper(II) sulphate $\geq 99\%$, Ph.Eur., anhydrous

article number: CP86

9.2 Other information

There is no additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Hygroscopic solid.

10.3 Possibility of hazardous reactions

Violent reaction with: Acetylene, Strong oxidiser, Strong alkali

10.4 Conditions to avoid

Keep away from heat. Decomposition takes place from temperatures above: 560 °C.

10.5 Incompatible materials

There is no additional information.

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Exposure route	Endpoint	Value	Species	Source
oral	LD50	482 mg/kg	rat	ECHA
dermal	LD50	>2,000 mg/kg	rat	ECHA

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Summary of evaluation of the CMR properties

Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

• Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

• Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Copper(II) sulphate ≥99 %, Ph.Eur., anhydrous

article number: **CP86**

Symptoms related to the physical, chemical and toxicological characteristics

- **If swallowed**

diarrhoea, vomiting, abdominal pain, circulatory collapse

- **If in eyes**

corneal opacity, Irritating to eyes

- **If inhaled**

Inhalation of dust may cause irritation of the respiratory system, cough

- **If on skin**

causes skin irritation

Other information

Circulatory collapse, Blood pressure drop

SECTION 12: Ecological information

12.1 Toxicity

acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)

Endpoint	Value	Species	Source	Exposure time
LC50	193 µg/l	fish	ECHA	96 h

12.2 Process of degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Data are not available.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

Safety data sheet

Safe Work Australia - Code of Practice



Copper(II) sulphate ≥99 %, Ph.Eur., anhydrous

article number: **CP86**

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.


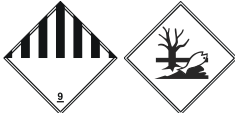
13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1	UN number	3077
14.2	UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
	Hazardous ingredients	Copper(II) sulphate
14.3	Transport hazard class(es)	
	Class	9 (miscellaneous dangerous substances and articles) (environmentally hazardous)
14.4	Packing group	III (substance presenting low danger)
14.5	Environmental hazards	hazardous to the aquatic environment
14.6	Special precautions for user	
		Provisions for dangerous goods (ADR) should be complied within the premises.
14.7	Transport in bulk according to Annex II of MARPOL and the IBC Code	
		The cargo is not intended to be carried in bulk.
14.8	Information for each of the UN Model Regulations	
	• Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)	
	UN number	3077
	Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
	Particulars in the transport document	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (Copper(II) sulphate), 9, III, (-)
	Class	9
	Classification code	M7
	Packing group	III
	Danger label(s)	9 + "fish and tree"
		
	Environmental hazards	yes (hazardous to the aquatic environment)

Safety data sheet

Safe Work Australia - Code of Practice



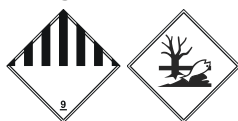
Copper(II) sulphate ≥99 %, Ph.Eur., anhydrous

article number: **CP86**

Special provisions (SP)	274, 335, 375, 601
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 kg
Transport category (TC)	3
Tunnel restriction code (TRC)	-
Hazard identification No	90
Emergency Action Code	2Z

• International Maritime Dangerous Goods Code (IMDG)

UN number	3077
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Particulars in the shipper's declaration	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., (Copper(II) sulphate), 9, III
Class	9
Marine pollutant	yes (P) (hazardous to the aquatic environment)
Packing group	III
Danger label(s)	9 + "fish and tree"



Special provisions (SP)	274, 335, 966, 967, 969
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 kg
EmS	F-A, S-F
Stowage category	A

• International Civil Aviation Organization (ICAO-IATA/DGR)

UN number	3077
Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Particulars in the shipper's declaration	UN3077, Environmentally hazardous substance, solid, n.o.s., (Copper(II) sulphate), 9, III
Class	9
Environmental hazards	yes (hazardous to the aquatic environment)
Packing group	III
Danger label(s)	9 + "fish and tree"



Copper(II) sulphate ≥99 %, Ph.Eur., anhydrous

article number: **CP86**

Special provisions (SP)	A97, A158, A179, A197
Excepted quantities (EQ)	E1
Limited quantities (LQ)	30 kg

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

National inventories

Substance is listed in the following national inventories:

Country	National inventories	Status
AU	AICS	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
EU	REACH Reg.	substance is listed
JP	CSCL-ENCS	substance is listed
KR	KECI	substance is listed
MX	INSQ	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TR	CICR	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed

Legend

AICS	Australian Inventory of Chemical Substances
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances
KECI	Korea Existing Chemicals Inventory
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

Copper(II) sulphate ≥99 %, Ph.Eur., anhydrous

article number: **CP86**

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
1.1	Registration number (REACH): This information is not available.	Registration number (REACH): 01-2119520566-40-xxxx	yes
2.1		Classification acc. to GHS: change in the listing (table)	yes
2.1	Remarks: For full text of Hazard- and EU Hazard-statements: see SECTION 16.		yes
2.2	Signal word: Danger	Signal word: Warning	yes
2.2		Pictograms: change in the listing (table)	yes
2.2		Hazard statements: change in the listing (table)	yes
2.2		Precautionary statements - prevention: change in the listing (table)	yes
2.2		Precautionary statements - response: change in the listing (table)	yes
2.2		Precautionary statements - disposal: change in the listing (table)	yes
2.2	Labelling of packages where the contents do not exceed 125 ml: Signal word: Danger	Labelling of packages where the contents do not exceed 125 ml: Signal word: Warning	yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
8.1		• human health values	yes
8.1		• human health values: change in the listing (table)	yes
14.3	Transport hazard class(es)	Transport hazard class(es): class 9 hazard - miscellaneous dangerous substances and articles	yes
14.8	Marine pollutant: yes (hazardous to the aquatic environment)	Marine pollutant: yes (P) (hazardous to the aquatic environment)	yes
14.8	Packing group: III9 + "fish and tree"	Packing group: III	yes
14.8		Danger label(s): 9 + "fish and tree"	yes
14.8	Special provisions (SP): A97, A158, A179, A197, 274	Special provisions (SP): A97, A158, A179, A197	yes

Copper(II) sulphate $\geq 99\%$, Ph.Eur., anhydrous

article number: **CP86**

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CMR	Carcinogenic, Mutagenic or toxic for Reproduction
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
index No	the Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
vPvB	very Persistent and very Bioaccumulative

Key literature references and sources for data

- UN Recommendations on the Transport of Dangerous Good
- Dangerous Goods Regulations (DGR) for the air transport (IATA)
- International Maritime Dangerous Goods Code (IMDG)

Safety data sheet

Safe Work Australia - Code of Practice



Copper(II) sulphate $\geq 99\%$, Ph.Eur., anhydrous

article number: **CP86**

List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H302	harmful if swallowed
H315	causes skin irritation
H319	causes serious eye irritation

Disclaimer

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.